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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/405,921	09/24/1999	MARK L. YOSELOFF	307.026US1	1046

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EXAMINER

ASHBURN, STEVEN L

ART UNIT	PAPER NUMBER
3714	25

DATE MAILED: 04/02/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/405,921	YOSELOFF ET AL. <i>MF</i>	
	Examiner	Art Unit	
	Steven Ashburn	3714	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 18 December 2002.

2a) This action is FINAL. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-17 and 19-37 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) Claim(s) _____ is/are allowed.

6) Claim(s) 1-17 and 19-37 is/are rejected.

7) Claim(s) _____ is/are objected to.

8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) The proposed drawing correction filed on _____ is: a) approved b) disapproved by the Examiner.
 If approved, corrected drawings are required in reply to this Office action.

12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All b) Some * c) None of:

1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. _____.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
 a) The translation of the foreign language provisional application has been received.

15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____	6) <input type="checkbox"/> Other: _____

DETAILED ACTION***Inventorship***

In view of the papers filed April 18, 2002, it has been found that this nonprovisional application, as filed, through error and without deceptive intent, improperly set forth the inventorship, and accordingly, this application has been corrected in compliance with 37 CFR 1.48(a). The inventorship of this application has been changed by addition of Timothy S. Wasigner and David Ronald Kingham as joint inventors. The application will be forwarded to the Office of Initial Patent Examination (OIPE) for issuance of a corrected filing receipt, and correction of the file jacket and PTO PALM data to reflect the inventorship as corrected.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1 ^{are} rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In particular, claim 1 recites the limitations "interface formats" and "universal controller". There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –
(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

Claims 1, 2, 5 and 6 are rejected under 35 U.S.C. 102(e) as being anticipated by Hedrick et al., U.S. Patent 6,135,884 (Oct. 24, 2000).

Hedrick discloses a computerized wagering game apparatus. The reference teaches that it is desirable to provide a gaming machine allowing the potential of secondary game events to be realized such that the machine can be easily modified with new games or features that can maintain or increase a player's interest or desire to play a particular game. *See col. 2:61-3:5.* In addition, it would be desirable to reduce the costliness and inconvenience of updating thematic displays on gaming machine glass. *See id.* Accordingly, *Hedrick* describes an improved apparatus and method for controlling the content of various necessary displays in a gaming machine for both primary and secondary game events, as well as other new applications. *See id.*

Claim 1: *Hedrick* teaches the following features:

- a) A computerized game controller operable to control a computerized wagering game. *See fig. 5-7.*
- b) A video display device and/or slot display device providing a visual display representation of a signal provided by a computerized game controller such that the video display devices displays at least one image selected from the group of (i) computerized wagering game status

information and (ii) symbol elements that change with the play of the wagering game. *See fig. 5-7, 12(a), 13(a)(b).*

- c) A communications port communicatively couple to the computerized game controller. *See fig. 5-7.*
- d) An interface assembly comprising one or more user interface devices. *See id.*
- e) An input/output (I/O) interface adapter configured to communicatively couple the interface assembly to the communications port and convert at least some signals between the interface formats supported by the interface assembly and the universal controller. *See id.*
- f) Communication port connected to gaming peripherals in communication with the computerized gaming controller. *See id.*

Thus the claimed invention is unpatentable because *Hendrick* anticipates every feature.

Claim 2: *Hendrick* additionally teaches having the game controller be a IBM PC-compatible computer system. *See fig. 6(621).*

Claims 5 and 6: *Hendrick* additionally teaches a credit management device including coin acceptors, coin recognition systems, currency acceptors, currency recognition systems, credit card readers, smart card readers and security device. *See fig. 5; col. 6:18-35, 7:6-20; 9:1-20.*

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 4, 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Hendrick*.

Claim 4: *Hendrick* additionally teaches a gaming device having user interfaces including buttons and a touch-screen. *See fig. 5-7.* Additionally, it describes a slot machine configuration. *See fig. 12-13(a)* However, it does not describe user interface including slot-machine arms or joysticks. Regardless, it is notoriously well known in gaming devices provide user interfaces including buttons, slot machine arms, touch screens, and joysticks. Consequently, it would have been obvious to an artisan at the time of the invention to modify *Hendrick* to add the features of slot machine arms and joysticks to provide users with interface devices appropriate for the game configuration..

Claims 7 and 8: *Hendrick* additionally teaches security devices including tilt switches and device integrity switches. *See col. 12:35-58; 18:30-44.* However, it does not describe spurious electrical discharge detectors. Regardless, it is well known in the art to incorporate detectors into gaming machines to protect system integrity caused by, for example, power failures or surges. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify *Hendrick*, to add the feature of a spurious electrical signal detector to protect gaming system's integrity due to power failures or surges.

Claims 3, 9-17 and 19-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Hendrick* in view of RTD USA, <www.rtdusa.com> (1998) (hereinafter “*RTD*”) and Mardsen et al., *Development of a PC-Windows Based Universal Control System*, 5th Intl. Conf. on FACTORY 2000, 2-4 April, 1997, Conf. Pub. No. 435 (hereinafter “*Mardsen*”).

Claims 3, 9, 12, 19, 22, 27-29 and 31-34: *Hendrick* additionally teaches that the wagering game controller includes a PC serial port, PC parallel port, non-volatile memory, a random number generator and paytables defining an payout for a random event.. *See fig. 6(651)(653)(657)*. Furthermore, the various communications ports convert, multiplex and decode signals between various interface formats including ISA bus, serial, parallel, audio, NTSC, PCMCIA and IDE. *See fig. 5-7*. However, *Hendrick* does not describe (i) a USB Port and (ii) at least some signals being converted from one voltage level to another (iii) inverting signals and (iv) buffering or latching signals. Regardless, these features are commonly incorporated in embedded controllers and would have been obvious to an artisan.

Generally, embedded controllers are well known and widely used in commercial, industrial and military systems. To control a system, the embedded controllers require I/O means exchange data with the variety of external devices. Towards that end, the controllers typically include one or more communication standard ports for serial (RS-232, RS-422, Arinc 429, USB, PS/2), parallel, and network communications. Furthermore, the controllers typically include I/O interfaces to exchange analog and digital data with components such as switches, buttons, motors, sensors, lights, relays, etc. Moreover, because external devices produce and receive data in different formats, embedded controllers typically include means to condition the data to place it in a format compatible with the peripheral. For example, a digital I/O devices commonly include means to buffer, latch or invert a digital signal. Likewise, analog I/O devices commonly include means to scale analog I/O signal within the range used by an external device. A wide variety of commercial-off-the-shelf (COTS) embedded controllers were available at the time of the invention. For example, *RTD* describes embedded controllers, I/O interfaces and signal conditioning modules based on the PC/104 standard. PC/104 was initially released in 1992 to provide a compact, modular system for control and data acquisition. The systems include one or more communication ports including serial, Universal Serial Bus and (USB), parallel, and ps/2. Furthermore, they are compatible with a variety of data acquisition modules including signal conditioning, analog I/O

and digital I/O. Thus, one of ordinary skill in the art at the time of the invention would possess knowledge of modular, PC-based, COTS systems for performing embedded control, data acquisition, and signal conditioning. However, mere knowledge of these systems does not necessarily suggest employing them in a gaming device. Regardless, the suggestion to employ a PC-based embedded controller in a gaming device was within the ordinary knowledge of an artisan at the time of the invention.

The benefits of modular and reusable controllers are recognized throughout commercial, industrial, and military applications. An gaming artisan would posses the knowledge that using a PC-based embedded controller would benefit a gaming system by providing an adaptable system that would reduce the time and cost required to retrofit legacy systems as well as the development of new systems. For example, *Mardsen* describes the development of a PC-based, universal control system for industrial control. In particular, the reference teaches that taking advantage of the controller's inherent adaptability which allows one controller to be used for many tasks with few changes to the hardware. *See p. 1.* As a result, the use of a “universal controller” may be used as a retrofit of existing systems or as part of a completely new system. *See p. 2.* Because of the variety of applications and hardware, the uses only need select the modules required for a specific application. *See id.* *Mardsen* suggests that a universal controller would benefit a wide range of commercial applications and is not merely limited to industrial control. *See p. 3.* Notably, with respect to software, *Mardsen* describes the benefits of objected oriented languages and standard libraries of functions to provide software modularity and reusability such that “controls” can be added to any project with ease. *See p. 3.* Thus , *Mardsen* demonstrates that it was generally known at the time of the invention to employ “universal”, pc-based embedded controllers and thereby reduce the time and cost of to simplify the retrofitting and development of systems.

In view of *RTD* and *Marden*, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the controller described in *Hendrick*, wherein an embedded, pc-based controller controls a gaming device, to employ a PC-based, embedded controller having a USB Port,

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converting at least some signals from one voltage level to another and inverting signals. As suggested by the prior art, the modification would provide a PC-based, COTS systems for performing embedded control, data acquisition, and signal conditioning and thereby reduce the time and cost of retrofitting and development of systems.

Claim 9, 29 and 34: The combination of *Hendrick* with *RTD* and *Mardsen* is described above.

See supra. In regards to claimed method reconfiguring a computerized wagering game, *Hendrick* describes a reconfigurable wagering game designed to be reduce the cost and effort required to provide new features to maintain or increase a players interest. *See col. 2:61-3:5.* *Mardsen* describes a universal embedded controller adaptable to a wide variety of applications including retrofitting existing systems to reduce the cost and effort of development. *See pp. 1-2.* Furthermore, retrofitting with a universal controller overcomes the inflexible nature of a legacy controller and the redesign costs limiting to its original, special purpose. *See p. 1.* *RTD* describes a variety of controllers, data acquisition modules, signal conditioning modules and harnesses for interfacing a PC-based, embedded controller in commercial and industrial systems. As a whole, the prior art suggests retrofitting a gaming device with a universal, pc-based, embedded controller having data acquisition modules, signal conditioning modules and harnesses allowing flexible control over a variety of systems and requiring few changes to the system hardware to support new tasks. However it does not describe the particular steps of performing the retrofit. Regardless, these steps are within the ordinary skill of an artisan and would have been obvious at the time of the invention.

As stated above, *Marden* suggests retrofitting an universal controller as a replacement to an existing, special-purpose controller. *See p. 1.* The “retrofit” implicitly contains fundamental steps including (i) removing the original special-purpose processor used to control the original system while leaving the legacy components including peripherals, sensors, motors, interfaces and harnesses; (ii)

inserting the new, universal controller; (iii) interfacing the universal controller with the legacy components; and (iii) performing validation and verification of the retrofit to ensure the system works as designed including verifying of communication between the processor and the components through the interfaces and harnesses.

Consequently, in the method of configuring a gaming device suggested by the combination of *Hendrick* with *RTD* and *Madsen*, wherein a universal controller is retrofit into a gaming device, it would have been obvious to an artisan at the time of the invention to perform the steps of:

- a) Removing an original special-purpose computerized game controller used to control a computerized wagering game from the apparatus wherein the original computerized game controller was designed to and capable of working exclusively with a particular game apparatus and at least some interface devices on the apparatus, the peripherals having been connected to the original computerized game controller through a wiring harness that is not removed when the original processor is removed. It is clearly within the ordinary skill of an artisan to reuse legacy components including preexisting cables, harnesses and other interfaces to reduce to level of rework involved in retrofitting a legacy system. Towards that end, *RTD* offers a variety of interface cables, terminal blocks and other adapters. *See pp. 47-49.*
- b) Inserting a universal computerized game controller operable to control a video wagering or slot game that can be played on the gaming apparatus and an input/output interface the operatively couples the universal controller to user interface devices of the game apparatus wherein the I/O interface adapter is configured to communicatively interface to the universal controller's communication ports (i.e. serial, parallel, network, digital acquisition, signal conditioning) and thereby convert signals between interface formats or perform buffering and latching of signals.

c) Sending signals from the computerized game controller through the input/output interface and harness communicate between the computerized game controller and the user interface devices wherein some communication is performed though a wiring harness that is not removed.

As taught by *Marden*, retrofitting existing systems by replacing a special purposed controller with a universal embedded controller adaptable to a wide variety of applications allows the system flexibly perform different tasks with few changes to hardware and thereby reduce the cost and effort of modifying a system.

Claims 10 and 35: *Hendrick* additionally teaches the step of, after sending signals, the video gaming apparatus enables a video display associated with the game apparatus to provide a visual representation of a signal provided by the computerized game controller such that the video display device displays at least one visual image selected from the groups of (a) computerized game status information (e.g. credits, time, score) and (b) symbol elements that change with the play of the wagering game. *See fig. 12-13(a).*

Claim 11: *Hendrick* additionally teaches having the game controller be a IBM PC-compatible computer system. *See fig. 6(621).*

Claim 13: *Hendrick* additionally teaches security devices including tilt switches, device integrity switches and spurious electrical discharge detectors. *See col. 12:35-58; 18:30-44.* It is implicit that a detection of a spurious electrical signal that halt game process execution will be detected and cause a tilt condition.

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Claims 14, 15 and 23: *Hendrick* additionally teaches a credit management device including coin acceptors, coin recognition systems, currency acceptors, currency recognition systems, credit card readers, and smart card readers. *See fig. 5; col. 6:18-35, 7:6-20; 9:1-20.*

Claims 16 and 17: *Hendrick* additionally teaches security devices including tilt switches, device integrity switches and spurious electrical discharge detectors. *See col. 12:35-58; 18:30-44.* It is implicit that a detection of a spurious electrical signal that halt game process execution will be detected and cause a tilt condition.

Claims 20 and 21: *RTD* additionally teaches an embedded mother board.

Claims 24 and 25: *Hendrick* additionally teaches a port connected to a computer to execute and control for peripherals. *See fig. 5-7.*

Claims 24 and 25: *Hendrick* additionally teaches a video gaming apparatus. *See fig. 12-13(a).*

Claim 30: *Hendrick* additionally teaches a video gaming apparatus coin acceptors, coin recognition systems, currency acceptors, currency recognition systems, credit card readers, smart card readers, security device game operating code and a store of images. *See fig. 5-7, 12-13(a).*

Claim 31: *Hendrick* additionally teaches peripherals including coin acceptors, coin recognition systems, currency acceptors, currency recognition systems, credit card readers, smart card readers and security device. *See fig. 5; col. 6:18-35, 7:6-20; 9:1-20.*

Claims 36 and 37: *RTD* additionally teaches I/O interfaces having digital logic to convert signals between protocols.

Response to Arguments

Applicant's arguments with respect to claims 1-17 and 19-37 have been considered but are moot in view of the new ground(s) of rejection.

Prior Art, Not Relied On

- a. Paul Virgo, *Embedded PC's for the Industrial Marketplace: An Analysis of the STD Bus*, WESCON'93. Conference Record, Sep 28-30, 1993, pp. 621 –623. The reference teaches that embedded pc-based systems, including PC/104 are well known. Additionally teaches the need for communication and data acquisition interfaces.
- b. Jahn Luke et al., *A commercial off-the-shelf based replacement strategy for aging avionics computers*, Aerospace and Electronics Conference, 1998. NAECON 1998, Proceedings of the IEEE 1998 National, 13-17 Jul 1998, pp. 177 –181: The reference teaches suggests upgrading special purpose, legacy controllers with a COTS that can be adapted to different purposes.
- c. Get Control, Inc., PC-104 DIG-IO-48 Plus, <<http://www.getcontrol.com>> downloaded from the internet on March 20, 2003: The reference describes a PC/104 digital I/O module including inversion and latching operations.
- d. D. Powell et al., *GUARDS: a generic upgradeable architecture for real-time dependable systems*, Parallel and Distributed Systems, IEEE Transactions on , Volume: 10, Issue: 6 , Jun 1999, pp. 580 –599: The reference teaches the development of COTS-based, generic, controllers.

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e. Robert, A. Burkle, *PC/104 Embedded Modules: The New Systems Components*, <http://www.-winsystems.com/papers/sys_components.pdf> downloaded from the Internet on Mar. 20, 2003: describes the many benefits of using PC/104 systems as embedded controllers including speeding product to market and reducing engineering effort.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven Ashburn whose telephone number is 703 305 3543. The examiner can normally be reached on Monday thru Friday, 8:00 AM to 4:30 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Hughes can be reached on 703-308-1806. The fax phone numbers for the organization where this application or proceeding is assigned are 703 872 9302 for regular communications and 703 872 9303 for After Final communications. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 308 1078.

S.A.
March 23, 2003


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